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Access DB# 91094

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: R GITOMER Examiner # : 69630 Date: 4/8/03
Art Unit: 1657 Phone Number 30 8-0732 Serial Number: 09/814,151
Mail Box and Bldg/Room Location: 11 301 / 11 D11 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: _____

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

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PTO-1590 (8-01)

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FILE COVERS 1907 - 24 Apr 2003 VOL 138 ISS 17
FILE LAST UPDATED: 23 Apr 2003 (20030423/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L91 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2003 ACS
AN **2002:782617** HCAPLUS
DN **137:348784**
TI In vitro screening of adaptogenic substances using glutathione reductase, **superoxide** dismutase, glutathione **peroxidase** or catalase as the test enzymes
IN Bykov, V. A.; Mineeva, M. F.; Dubinskaya, V. A.; Rebrov, L. B.; Kolkhir, V. K.
PA Nauchno-Issledovatel'skii i Uchebno-Metodicheskii Tsentr Biomeditsinskikh Tekhnologii VILAR, Russia
SO Russ., No pp. given
CODEN: RUXXE7
DT Patent
LA Russian
IC ICM G01N033-68
ICS G01N033-15
CC **9-2** (**Biochemical Methods**)
Section cross-reference(s): 1, **17**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2181890	C1	20020427	RU 2001-115328	20010606
PRAI	RU 2001-115328		20010606		

AB The method of the invention involves using glutathione reductase or **superoxide** dismutase, and glutathione **peroxidase** or catalase as the test enzymes for screening of adaptogenic substances. The effect of the potential adaptogenic substance on the test enzyme reaction kinetics is detd. The ratio of the enzymic reaction rate for glutathione reductase or **superoxide** dismutase after adding the potential adaptogenic substance to the enzymic reaction rate before adding the substance is to be > 1. The ratio of enzymic reaction rate for glutathione **peroxidase** or catalase after adding the potential adaptogenic substance and enzymic reaction rate before adding the substance is to be < 1.
ST adaptogen screening glutathione **peroxidase** reductase **superoxide** dismutase catalase
IT Drug screening

(in vitro screening of adaptogenic substances using glutathione reductase, **superoxide** dismutase, glutathione **peroxidase** or catalase as the test enzymes)

IT Glycosides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(panaxosides; in vitro screening of adaptogenic substances using glutathione reductase, **superoxide** dismutase, glutathione **peroxidase** or catalase as the test enzymes)

IT Echinacea purpurea
Eleutherococcus
Ginseng (Panax)
Leuzea
(root ext.; in vitro screening of adaptogenic substances using glutathione reductase, **superoxide** dismutase, glutathione **peroxidase** or catalase as the test enzymes)

IT Natural products, pharmaceutical
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(screening of; in vitro screening of adaptogenic substances using glutathione reductase, **superoxide** dismutase, glutathione **peroxidase** or catalase as the test enzymes)

IT **Diet**
(**supplements**, screening of; in vitro screening of adaptogenic substances using glutathione reductase, **superoxide** dismutase, glutathione **peroxidase** or catalase as the test enzymes)

IT 50-81-7, Ascorbic acid, biological studies 10592-13-9, Doxycycline hydrochloride 63513-71-3, Bemethyl 100343-43-9, Oxolin 127464-43-1, Mexidol
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(in vitro screening of adaptogenic substances using glutathione reductase, **superoxide** dismutase, glutathione **peroxidase** or catalase as the test enzymes)

IT 9001-05-2, Catalase 9001-48-3, Glutathione reductase **9013-66-5**, Glutathione **peroxidase 9054-89-1**, **Superoxide** dismutase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(in vitro screening of adaptogenic substances using glutathione reductase, **superoxide** dismutase, glutathione **peroxidase** or catalase as the test enzymes)

IT **9013-66-5**, Glutathione **peroxidase 9054-89-1**, **Superoxide** dismutase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(in vitro screening of adaptogenic substances using glutathione reductase, **superoxide** dismutase, glutathione **peroxidase** or catalase as the test enzymes)

RN 9013-66-5 HCAPLUS
CN Peroxidase, glutathione (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9054-89-1 HCAPLUS
CN Dismutase, superoxide (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L91 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2003 ACS
AN **2001:798718** HCAPLUS
DN **135:315581**
TI Optical **antioxidant** sensing process
IN **Nick, Gina Lynn**
PA USA
SO U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO

DT Patent
LA English
IC ICM C12Q001-28
ICS G01N021-75
NCL 436164000
CC **9-5** (**Biochemical Methods**)
Section cross-reference(s): 17
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2001036671	A1	20011101	US 2001-814151	20010321
PRAI	US 2000-192251P	P	20000325		

AB A process for assaying the **free radical scavenging** capability of nutritional formulations using an **org. dye reagent** and an optical fiber sensor.

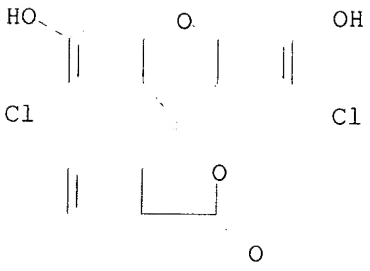
ST optical **antioxidant** sensing process
IT Biological transport
(diffusion; optical **antioxidant** sensing process)
IT Intestine
(large; optical **antioxidant** sensing process)
IT **Antioxidants**
Cell membrane
Composition
Containers
Digestive tract
Fiber optic sensors
Food
Intestine
Nutrition, animal
Oxidation
Oxidative stress, biological
Pancreatic juice
Radical scavengers
Samples
Sampling
Solutions
Stomach
(optical **antioxidant** sensing process)
IT **Reagents**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(optical **antioxidant** sensing process)
IT Vitamins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(optical **antioxidant** sensing process)
IT Bile salts
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(optical **antioxidant** sensing process)
IT **Hydroxides** (inorganic)
RL: CAT (Catalyst use); USES (Uses)
(optical **antioxidant** sensing process)
IT **Transition metals**, uses
RL: CAT (Catalyst use); USES (Uses)
(optical **antioxidant** sensing process)
IT **Radicals**, processes
RL: REM (Removal or disposal); PROC (Process)
(optical **antioxidant** sensing process)
IT **Reactive oxygen species**
RL: REM (Removal or disposal); PROC (Process)
(optical **antioxidant** sensing process)
IT **Dyes**
(**org.**; optical **antioxidant** sensing process)

IT Nutrients
(phyto-; optical **antioxidant** sensing process)
IT Intestine
(small; optical **antioxidant** sensing process)
IT Oxides (inorganic), uses
RL: CAT (Catalyst use); USES (Uses)
(**superoxides**; optical **antioxidant** sensing process)
IT Fats and Glyceridic oils, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(wheat germ; optical **antioxidant** sensing process)
IT **9003-99-0, Peroxidase**
RL: CAT (Catalyst use); USES (Uses)
(horseradish; optical **antioxidant** sensing process)
IT **7782-44-7D, Oxygen, radicals,** analysis
RL: ANT (Analyte); RCT (Reactant); REM (Removal or disposal); ANST (Analytical study); PROC (Process); RACT (Reactant or reagent)
(optical **antioxidant** sensing process)
IT **76-54-0**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(optical **antioxidant** sensing process)
IT **1406-18-4, Vitamin E 53188-07-1,**
Trolox
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(optical **antioxidant** sensing process)
IT **171363-09-0,** Hydrogen oxide (**H2O2**)
RL: CAT (Catalyst use); USES (Uses)
(optical **antioxidant** sensing process)
IT **9003-99-0, Peroxidase**
RL: CAT (Catalyst use); USES (Uses)
(horseradish; optical **antioxidant** sensing process)
RN 9003-99-0 HCAPLUS
CN Peroxidase (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **7782-44-7D, Oxygen, radicals,** analysis
RL: ANT (Analyte); RCT (Reactant); REM (Removal or disposal); ANST (Analytical study); PROC (Process); RACT (Reactant or reagent)
(optical **antioxidant** sensing process)
RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

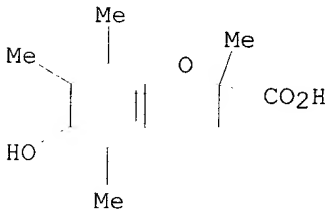
O=O

IT **76-54-0**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(optical **antioxidant** sensing process)
RN 76-54-0 HCAPLUS
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',7'-dichloro-3',6'-dihydroxy- (9CI) (CA INDEX NAME)

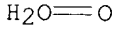


IT **1406-18-4, Vitamin E 53188-07-1,**
Trolox
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(optical **antioxidant** sensing process)
RN 1406-18-4 HCAPLUS
CN Vitamin E (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 53188-07-1 HCAPLUS
CN 2H-1-Benzopyran-2-carboxylic acid, 3,4-dihydro-6-hydroxy-2,5,7,8-tetramethyl- (9CI) (CA INDEX NAME)



IT **171363-09-0,** Hydrogen oxide (**H2O2**)
RL: CAT (Catalyst use); USES (Uses)
(optical **antioxidant** sensing process)
RN 171363-09-0 HCAPLUS
CN Hydrogen oxide (H2O2) (9CI) (CA INDEX NAME)



L91 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2003 ACS
AN **2001:443430** HCAPLUS
DN **135:376881**
TI **Scavenging ability** on **reactive oxygen** species (ROS) of two natural **antioxidants**
AU Jin, Hui; Zhao, Yaping; Yu, Wenli; Wang, Dapu
CS College of Chemistry + Chemical Industry, Shanghai Jiaotong University, Shanghai, 200240, Peop. Rep. China
SO Shipin Gongye Keji (2001), 22(2), 25-27
CODEN: SGOKE6; ISSN: 1002-0306
PB Shipin Gongye Keji Bianjibu
DT Journal
LA Chinese
CC 64-2 (Pharmaceutical Analysis)
Section cross-reference(s): **18**
AB The **scavenging** ability on **reactive oxygen**

species (ROS) of two natural **antioxidants** including lycopene and **vitamin E** was studied by chemiluminescence in models for generation of **superoxide** anions, hydroxyl **radicals** and lipid **peroxidn**. The results showed that the efficient concn. of lycopene towards **superoxide** anions, hydroxyl **radicals**, lipid **peroxidn**. was 0.75 mg/mL, 0.05 mg/mL and 0.1 mg/mL, resp. The required time was 6 s, 6 s and 24 s, resp. The **vitamin E** was not an effective **scavenger** towards **superoxide** anion. The EC50 of **vitamin E** towards hydroxyl **radicals** and lipid **peroxidn**. was 0.1 mg/mL and 0.1 mg/mL. The required time was 6 s and 24 s resp.

ST lycopene **vitamin E** radical **scavenger** **antioxidant**

IT **Peroxides**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(lipid; **scavenging** ability on **reactive oxygen** species (ROS) of two natural **antioxidants**)

IT Lipids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**peroxides**; **scavenging** ability on **reactive oxygen** species (ROS) of two natural **antioxidants**)

IT **Antioxidants**
Radical scavengers
(**scavenging** ability on **reactive oxygen** species (ROS) of two natural **antioxidants**)

IT **Reactive oxygen species**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**scavenging** ability on **reactive oxygen** species (ROS) of two natural **antioxidants**)

IT **502-65-8**, Lycopene **1406-18-4**, **Vitamin E**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**scavenging** ability on **reactive oxygen** species (ROS) of two natural **antioxidants**)

IT 3352-57-6, Hydroxyl, biological studies **11062-77-4**, **Superoxide** anion
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**scavenging** ability on **reactive oxygen** species (ROS) of two natural **antioxidants**)

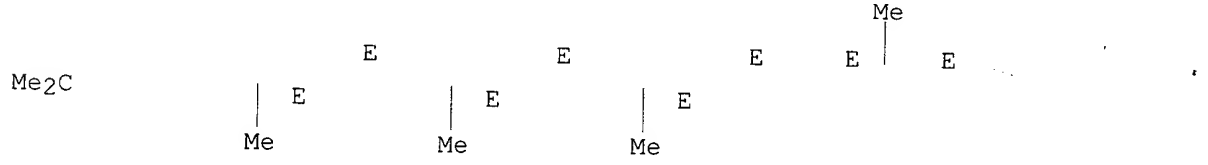
IT **502-65-8**, Lycopene **1406-18-4**, **Vitamin E**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**scavenging** ability on **reactive oxygen** species (ROS) of two natural **antioxidants**)

RN 502-65-8 HCAPLUS

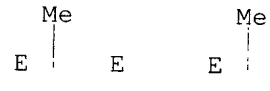
CN .psi.,.psi.-Carotene (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



RN 1406-18-4 HCAPLUS
CN Vitamin E (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **11062-77-4, Superoxide** anion
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**scavenging** ability on **reactive oxygen** species (ROS) of two natural **antioxidants**)
RN 11062-77-4 HCAPLUS
CN Superoxide (8CI, 9CI) (CA INDEX NAME)

L91 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2003 ACS
AN **2000:842380** HCAPLUS
DN **134:14933**
TI Method for quantifying **antioxidants** in foods and medical specimens using iodine
IN Shanbrom, Edward
PA Shanbrom Technologies LLC, USA
SO PCT Int. Appl., 17 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N033-82
ICS G01N033-52
CC **9-7** (**Biochemical Methods**)
Section cross-reference(s): **17**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000072024	A1	20001130	WO 2000-US11899	20000428
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2002117403	A1	20020829	US 1999-315688	19990520
	EP 1179188	A1	20020213	EP 2000-932012	20000428
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	US 1999-315688	A1	19990520		
	WO 2000-US11899	W	20000428		

AB A simple anal. method for detg. **antioxidant** level in food product and body fluids such as urine is based on redn. of elemental iodine. The method adds an aq. soln. of iodine and an iodophor to the

sample to be tested. Polyvinylpyrrolidone is a preferred iodophor. **Antioxidant** materials in the sample reduce the elemental iodine and the reaction is monitored by measuring either a decrease in iodine or an increase in iodide ion. A preferred method of practising the invention is to measure the change in iodide ion with an ion selective electrode and an appropriate electronic meter. The method rapidly and inexpensively produces **antioxidant** measurements that are comparable to those produced by more complex and cumbersome methods.

ST **antioxidant** detn body fluid food iodine

IT Fruit and vegetable juices
(blackberry juice; method for quantifying **antioxidants** in foods and medical specimens using iodine)

IT Fruit and vegetable juices
(blueberry juice; method for quantifying **antioxidants** in foods and medical specimens using iodine)

IT Fruit and vegetable juices
(carrot juice; method for quantifying **antioxidants** in foods and medical specimens using iodine)

IT Fruit and vegetable juices
(cranberry; method for quantifying **antioxidants** in foods and medical specimens using iodine)

IT Fig (Ficus carica)
(dried figs; method for quantifying **antioxidants** in foods and medical specimens using iodine)

IT Cranberry
(ext., dietary **antioxidant** ShanStar effect on urine; method for quantifying **antioxidants** in foods and medical specimens using iodine)

IT Tea products
(green, herbal **supplements**; method for quantifying **antioxidants** in **foods** and medical specimens using iodine)

IT Ginkgo biloba
Ginseng (Panax)
Pepper (Piper methysticum)
Serenoa repens
(herbal **supplements**; method for quantifying **antioxidants** in **foods** and medical specimens using iodine)

IT Natural products, pharmaceutical
RL: AMX (Analytical matrix); ANST (Analytical study)
(herbal **supplements**; method for quantifying **antioxidants** in **foods** and medical specimens using iodine)

IT Antibacterial agents
(iodophors; method for quantifying **antioxidants** in foods and medical specimens using iodine)

IT Carrot
Cranberry
Raspberry
(juice; method for quantifying **antioxidants** in foods and medical specimens using iodine)

IT Samples
(liq.; method for quantifying **antioxidants** in foods and medical specimens using iodine)

IT **Antioxidants**
Apple juice
Body fluid
Food analysis
Ion-selective electrodes
Urine analysis
(method for quantifying **antioxidants** in foods and medical specimens using iodine)

IT Egg, poultry
(of **vitamin E** fed or ordinary feed fed chickens; method for quantifying **antioxidants** in foods and medical specimens using iodine)
IT Cranberry
(polyphenolic **antioxidants** effect on urine; method for quantifying **antioxidants** in foods and medical specimens using iodine)
IT Fruit and vegetable juices
(raspberry juice; method for quantifying **antioxidants** in foods and medical specimens using iodine)
IT Wine
(red; method for quantifying **antioxidants** in foods and medical specimens using iodine)
IT Soups
(vegetable; method for quantifying **antioxidants** in foods and medical specimens using iodine)
IT Grape juice
(white; method for quantifying **antioxidants** in foods and medical specimens using iodine)
IT **1406-18-4, Vitamin E**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**antioxidant** level in chicken eggs of chickens fed; method for quantifying **antioxidants** in foods and medical specimens using iodine)
IT 9003-39-8, Polyvinylpyrrolidone
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(as iodophor; method for quantifying **antioxidants** in foods and medical specimens using iodine)
IT 20461-54-5, Iodide ion, analysis
RL: ANT (Analyte); FMU (Formation, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(method for quantifying **antioxidants** in foods and medical specimens using iodine)
IT 7553-56-2, Iodine, biological studies
RL: ARG (Analytical reagent use); RCT (Reactant); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(method for quantifying **antioxidants** in foods and medical specimens using iodine)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Bleisteiner, M; US 4300905 A 1981 HCAPLUS
(2) Cheregi, M; ANAL LETT 1997, V30(14), P2625 HCAPLUS
(3) Coetzee, C; S AFR J CHEM 1991, V44(1), P22 HCAPLUS
(4) Danet, A; REV CHIM (BUCHAREST) 1994, V45(11), P1000 HCAPLUS
(5) Farrington, A; ANALYST (LONDON) 1994, V119(2), P233 HCAPLUS
(6) Morris, D; US 4141688 A 1979 HCAPLUS
IT **1406-18-4, Vitamin E**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**antioxidant** level in chicken eggs of chickens fed; method for quantifying **antioxidants** in foods and medical specimens using iodine)
RN 1406-18-4 HCAPLUS
CN Vitamin E (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L91 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2003 ACS
AN **2000:799444** HCAPLUS
DN **134:97454**

TI Why and how should we measure **oxidative** DNA damage in nutritional studies? how far have we come?
AU Halliwell, Barry
CS Department of Biochemistry, National University of Singapore, Singapore, 119260, Singapore
SO American Journal of Clinical Nutrition (2000), 72(5), 1082-1087
CODEN: AJCNAC; ISSN: 0002-9165
PB American Society for Clinical Nutrition
DT Journal
LA English
CC **9-16** (**Biochemical Methods**)
Section cross-reference(s): **18**
AB A commentary. **Free radicals** and other **reactive** species are constantly generated in vivo and cause **oxidative** damage to DNA at a rate that is probably a significant contributor to the age-related development of cancer. Agents that decrease **oxidative** DNA damage should thus decrease the risk of cancer development. That is, **oxidative** DNA damage is a "biomarker" for identifying persons at risk (for dietary or genetic reasons, or both) of developing cancer and for suggesting how the diets of these persons could be modified to decrease that risk. This biomarker concept presupposes that we can measure **oxidative** damage accurately in DNA from relevant tissues. Little information is available on whether **oxidative** DNA damage in blood cells mirrors such damage in tissues at risk of cancer development. Measurement of 8-hydroxylated guanine (eg, as 8-hydroxy-2'-deoxyguanosine; 8OHdG) is the commonest method of assessing DNA damage, but there is no consensus on what the true levels are in human DNA. If the lowest levels reported are correct, 8OHdG may be only a minor product of **oxidative** DNA damage. Indeed, 8OHdG may be difficult to measure because of the ease with which it is formed artifactually during isolation, hydrolysis, and anal. of DNA. Mass spectrometry can accurately measure a wide spectrum of DNA base damage products, but the development of liq. chromatog.-mass spectrometry techniques and improved DNA hydrolysis procedures is urgently required. The available evidence suggests that in Western populations, intake of certain fruit and vegetables can decrease **oxidative** DNA damage, whereas ascorbate, **vitamin E**, and .beta.-carotene cannot.
ST **oxidative** DNA damage analysis nutrition
IT DNA
RL: ANT (Analyte); ANST (Analytical study)
(damage; measurement of **oxidative** DNA damage in relation to nutritional intake and cancer risk)
IT Neoplasm
Nutrition, animal
(measurement of **oxidative** DNA damage in relation to nutritional intake and cancer risk)
IT 88847-89-6, 8-Hydroxy-2'-deoxyguanosine
RL: ANT (Analyte); ANST (Analytical study)
(measurement of **oxidative** DNA damage in relation to nutritional intake and cancer risk)
RE.CNT 80 THERE ARE 80 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Ames, B; Proc Natl Acad Sci U S A 1993, V90, P7915 HCAPLUS
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L91 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2003 ACS
AN **2000:105025** HCAPLUS
DN **132:163165**
TI A method for measuring an activity of medicine or food to eliminate **reactive oxygen** species
IN Takashima, Seisuke; Yamane, Takeyo
PA Kokayama University, Japan; Iryohojin Shadan Yamane Clinic
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12Q001-26
ICS G01N021-25; G01N033-02; G01N033-15; A61K035-78
CC **9-16** (**Biochemical Methods**)
Section cross-reference(s): 1
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000041697	A2	20000215	JP 1998-220728	19980804
PRAI	JP 1998-220728		19980804		

AB A simple method is provided for clarifying the medical efficacy of chinese medicine, i.e., natural pharmaceutical contg. multiple components by measuring its activity to eliminate **superoxide** at the site of medicine prepn. This method utilizes the redn. reaction of cytochrome C. A soln. or an extn. liq. of medicine or food is mixed with cytochrome C and hypoxanthine. A visible absorption spectrum is taken at 549-551nm at the fixed time after xanthine oxidase is mixed with the reaction mixt. A neg. correlation was obsd. with 16 chinese medicines between their activities to eliminate **superoxide** measured by this method and their fading effects on diphenylpicrylhydrazine (DPPH)/methanol due to the oxidn. reaction.

ST **reactive oxygen** species chinese medicine food; cytochrome C **superoxide** natural pharmaceutical spectroscopy
IT Natural products, pharmaceutical
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(Chaihu; method for measuring activity of medicine or food to eliminate **reactive oxygen** species)
IT Natural products, pharmaceutical
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(Chayou; Inchinkou; Ougon; Nindou; Shouma; Botanbi; Soboku; Senkotsu, Chouji; Kouboku; Touyaku; Biwayou; method for measuring activity of medicine or food to eliminate **reactive oxygen** species)
IT Natural products, pharmaceutical
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(licorice; method for measuring activity of medicine or food to eliminate **reactive oxygen** species)
IT Cinnamomum
Drugs
Ephedra
Food
UV and visible spectroscopy

(method for measuring activity of medicine or food to eliminate **reactive oxygen** species)

IT **Reactive oxygen species**
RL: ANT (Analyte); ANST (Analytical study)
(method for measuring activity of medicine or food to eliminate **reactive oxygen** species)

IT **11062-77-4, Superoxide**
RL: ANT (Analyte); ANST (Analytical study)
(method for measuring activity of medicine or food to eliminate **reactive oxygen** species)

IT 68-94-0, Hypoxanthine 1707-75-1, Diphenylpicrylhydrazine 9002-17-9, Oxidase, xanthine **9007-43-6**, Cytochrome c, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method for measuring activity of medicine or food to eliminate **reactive oxygen** species)

IT **11062-77-4, Superoxide**
RL: ANT (Analyte); ANST (Analytical study)
(method for measuring activity of medicine or food to eliminate **reactive oxygen** species)

RN 11062-77-4 HCAPLUS
CN Superoxide (8CI, 9CI) (CA INDEX NAME)

O=O

IT **9007-43-6**, Cytochrome c, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method for measuring activity of medicine or food to eliminate **reactive oxygen** species)

RN 9007-43-6 HCAPLUS
CN Cytochrome c (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L91 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2003 ACS
AN **2000:3857** HCAPLUS
DN **132:278266**
TI **Vitamin E** (**tocopherols** and tocotrienols): biokinetics and methods for determination
AU Gama, Paula C. F. S.; Oliveira, M. Beatriz P. P.; Ferreira, Margarida A.
CS CEQUP/Laboratorio de Bromatologia, Facultad de Farmacia, Universidade Porto, Oporto, 4050, Port.
SO Revista Portuguesa de Farmacia (1999), 49(3), 121-130
CODEN: RPTFAU; ISSN: 0484-811X
PB Ordem dos Farmaceuticos
DT Journal; General Review
LA Portuguese
CC 17-0 (Food and Feed Chemistry)
Section cross-reference(s): **9**, 18
AB A review with 42 refs. The bioavailability of dietary **tocopherols** and tocotrienols, nutritional requirements, absorption, transport, metab., toxicity, and excretion from the the human body are discussed. Methods for the detn. of different isomers of **tocopherols** and tocotrienols in foods and blood serum lipoproteins and methods of **antioxidant** activity estn. are presented. Chem., spectrophotometric and chromatog. (GC, HPLC, supercrit. fluid) methods are mentioned.
ST review food blood analysis **tocopherol** tocotrienol nutrition
IT Blood analysis
Food analysis
Nutrition, animal
(**tocopherols** and tocotrienols biokinetics and methods for

detn. in foods and blood serum lipoproteins)
IT **Tocopherols**
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); FFD (Food or feed use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(**tocopherols** and tocotrienols biokinetics and methods for detn. in foods and blood serum lipoproteins)
IT 6829-55-6D, Tocotrienol, derivs.
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); FFD (Food or feed use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(**tocopherols** and tocotrienols biokinetics and methods for detn. in foods and blood serum lipoproteins)
RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L91 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2003 ACS
AN **1999:395259** HCAPLUS
DN **131:179777**
TI **Free Radical Scavenging** Activity of **Grape** Seed Extract and **Antioxidants** by Electron Spin

Resonance Spectrometry in an **H2O2/NaOH**/DMSO System

AU Yamaguchi, Fumio; Yoshimura, Yoshihiro; Nakazawa, Hiroyuki; Ariga, Toshiaki
CS Department of Analytical Chemistry Faculty of Pharmaceutical Science, Hoshi University, Shinagawa-ku Tokyo, 142, Japan

SO Journal of Agricultural and Food Chemistry (1999), 47(7), 2544-2548
CODEN: JAFCAU; ISSN: 0021-8561
PB American Chemical Society
DT Journal
LA English
CC 1-12 (Pharmacology)
Section cross-reference(s): **18**

AB The **scavenging** effects of grape seed ext. (GSE) on **free radicals** formed in an **H2O2/NaOH**/DMSO system were examd. using a spin-trapping ESR (ESR) method and compared with other natural **antioxidants**, ascorbic acid, dl-.alpha.-**tocopherol**, and .beta.-carotene. GSE reduced greatly the ESR signal intensity of **superoxide radical** -5,5-dimethyl-1-pyrroline-N-oxide (DMPO) adducts. GSE also exhibited weak **scavenging** activity on hydroxyl **radical** and a little **scavenging** activity on Me **radical**. Ascorbic acid exhibited strong **superoxide** and hydroxyl **radical** **scavenging** activities, but it increased the amt. of Me **radical** at high concn. dl-.alpha.-**Tocopherol** reduced the amt. of **superoxide** anion and esp. the amt. of Me **radical**. However, it slightly reduced the amt. of hydroxyl **radical**. .beta.-Carotene reduced the amt. of hydroxyl **radical** and Me **radical**, but it also slightly reduced **superoxide** anion. In the case of combined use of .beta.-carotene and dl-.alpha.-**tocopherol**, all **radical** species were suppressed. Combination of GSE and dl-.alpha.-**tocopherol** also could reduce all **radical** species. .beta.-Carotene and dl-.alpha.-**tocopherol** could reduce the Me **radical** formation induced by ascorbic acid.

ST radical **scavenging** grape seed ext **antioxidant**

IT **Antioxidants**
Radical scavengers
(**free radical scavenging** activity of grape seed ext. and **antioxidants** in **H2O2-NaOH**-DMSO system)

IT **Reactive oxygen species**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**free radical scavenging** activity of grape seed ext. and **antioxidants** in **H2O2-NaOH**-DMSO system)

IT Proanthocyanidins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**free radical scavenging** activity of grape seed ext. contg.)

IT Grape
(seed ext.; **free radical scavenging** activity of grape seed ext. and **antioxidants** in **H2O2-NaOH**-DMSO system)

IT Cooperative phenomena
(synergism; synergistic radical **scavenging** activities of grape seed ext. and **antioxidants**)

IT 50-81-7, L-Ascorbic acid, biological studies **7235-40-7**, .beta.-Carotene **10191-41-0**, dl-.alpha.-**Tocopherol**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**free radical scavenging** activity of

grape seed ext. and **antioxidants** in **H2O2-NaOH**-DMSO system)

IT 2229-07-4, Methyl **radical** 3352-57-6, Hydroxyl **radical**, biological studies **11062-77-4, Superoxide**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**free radical scavenging** activity of grape seed ext. and **antioxidants** in **H2O2-NaOH**-DMSO system)

RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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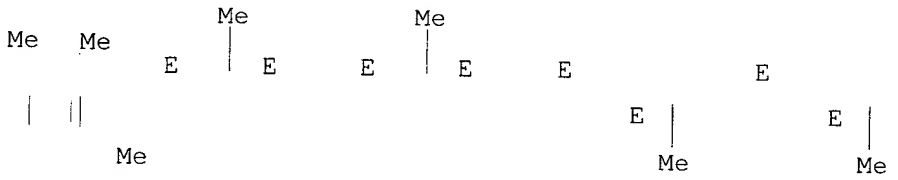
IT **7235-40-7**, .beta.-Carotene **10191-41-0**, dl-.alpha.-**Tocopherol**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**free radical scavenging** activity of grape seed ext. and **antioxidants** in **H2O2-NaOH**-DMSO system)

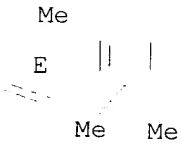
RN 7235-40-7 HCAPLUS
CN .beta.,.beta.-Carotene (9CI) (CA INDEX NAME)

Double bond geometry as shown.

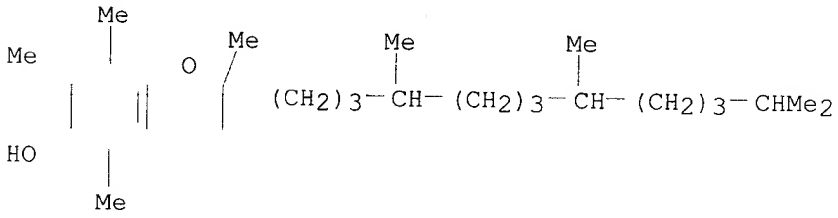
PAGE 1-A



PAGE 1-B



RN 10191-41-0 HCAPLUS
CN 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)- (9CI) (CA INDEX NAME)



IT **11062-77-4, Superoxide**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**free radical scavenging** activity of grape seed ext. and **antioxidants** in **H2O2-NaOH**-DMSO system)
RN 11062-77-4 HCAPLUS
CN Superoxide (8CI, 9CI) (CA INDEX NAME)

L91 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:686944** HCAPLUS
DN **130:22332**
TI Evaluation of **antioxidant** activity of natural products
AU Miyazawa, Teruo; Nakagawa, Kiyotaka
CS Grad. Sch. Agric., Tohoku Univ., Tsutsumidori-Amamiyamachi, Aoba-ku, Sendai-shi, 981-8555, Japan
SO Nihon Yukagakkaishi (1998), 47(10), 1073-1082
CODEN: NIYUFC; ISSN: 1341-8327
PB Nihon Yukagaku Gakkai
DT Journal; General Review
LA Japanese
CC **9-0 (Biochemical Methods)**

Section cross-reference(s): 1, **18**, 64

AB A review with 35 refs. Methods for evaluating **antioxidant** properties of natural products in vitro and in vivo using lipid peroxidn. systems are reviewed. The **antioxidant** activity of **tocopherols**, carotenoids, flavonoids, and curcuminoids has been studied against lipid peroxidn. induced in microsomes, erythrocytes, blood plasma lipoproteins, and in live animal trials. The in vivo **antioxidant** functions of natural products has been extensively investigated in humans together with explanations of their intestinal absorption and metabolic fate.

ST review natural product **antioxidant** evaluation nutrition

IT **Antioxidants**
Nutrition, animal
(**antioxidant** activity of natural products and evaluation methods)

IT Natural products
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(**antioxidant** activity of natural products and evaluation methods)

L91 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2003 ACS

AN **1998:394051** HCAPLUS

DN **129:108276**

TI **Food** as **supplemental antioxidants** and analytical method for detecting physiological **oxidative stresses**

IN Echi, Hirotomo; Catller, Richard G.

PA Nikken Food K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM A23L001-30
ICS A23L001-30; A61K035-56; A61K035-78; B42D015-00; G06C003-00; G09B001-00

CC 17-1 (**Food** and **Feed** Chemistry)
Section cross-reference(s): **9**

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10155454	A2	19980616	JP 1996-320199	19961129
	JP 3381053	B2	20030224		
	CA 2222828	AA	19980529	CA 1997-2222828	19971128
PRAI	JP 1996-320199	A	19961129		

AB A chart relating the extent of oxidn. with indicators is presented for detecting **oxidative stresses**, and food with **antioxidant** activities are provided. For example, blood serum 4-hydroxynonenal and hydroxy peroxide are used as indicators for measuring the extent of **oxidative stress**. Natural materials contg. water-sol. **antioxidants** are tea catechin, tea, fruits, green vegetables, and beans. Good health is maintained by providing food **antioxidants** to patients experiencing **oxidative stresses**.

ST **oxidative stress antioxidant** health food

IT Peroxides, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as indicator for measuring physiol. **oxidative stresses**)

IT **Carotenes, biological studies**
Ferritins
Thiols (organic), biological studies

Tocopherols
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as indicator of physiol. **oxidative stresses**)

IT Health **food**
(as **supplemental antioxidants** and anal. method for detecting **oxidative stresses**)

IT **Antioxidants**
Stress, animal
(**food** as **supplemental antioxidants** and anal. method for detecting **oxidative stresses**)

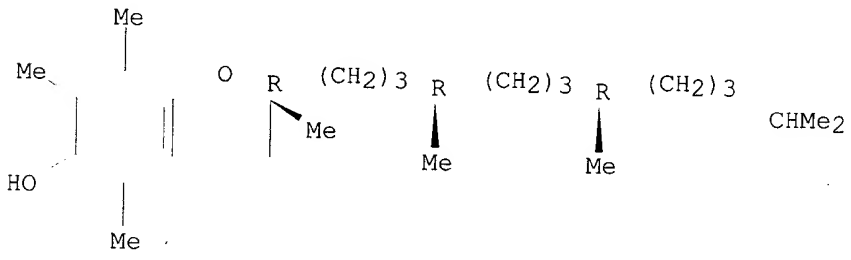
IT 4764-17-4, MDA (pharmaceutical)
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as indicator for measuring physiol. **oxidative stresses**)

IT 50-81-7, L-Ascorbic acid, biological studies 50-99-7, Glucose, biological studies 57-88-5, Cholesterol, biological studies **59-02-9**, .alpha.-**Tocopherol** **68-26-8**, Retinol 69-93-2, Uric acid, biological studies **79-81-2**, Retinol palmitate **119-13-1**, .delta.-**Tocopherol** **144-68-3**, Zeaxanthin **148-03-8**, .beta.-**Tocopherol** 153-18-4, Rutin 303-98-0, Coenzyme Q-10 **432-70-2**, .alpha.-Carotene **472-70-8**, .beta.-Cryptoxanthin **502-65-8**, Lycopene **635-65-4**, Bilirubin, biological studies **7235-40-7**, .beta.-Carotene 7439-89-6, Iron, biological studies 9001-05-2, Catalase **9013-66-5**, Glutathione **peroxidase**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as indicator of physiol. **oxidative stresses**)

IT **59-02-9**, .alpha.-**Tocopherol** **68-26-8**, Retinol **79-81-2**, Retinol palmitate **119-13-1**, .delta.-**Tocopherol** **144-68-3**, Zeaxanthin **148-03-8**, .beta.-**Tocopherol** **432-70-2**, .alpha.-Carotene **472-70-8**, .beta.-Cryptoxanthin **502-65-8**, Lycopene **635-65-4**, Bilirubin, biological studies **7235-40-7**, .beta.-Carotene **9013-66-5**, Glutathione **peroxidase**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as indicator of physiol. **oxidative stresses**)

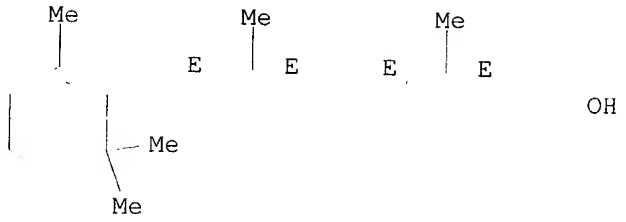
RN 59-02-9 HCAPLUS
CN 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,5,7,8-tetramethyl-2-[(4R,8R)-4,8,12-trimethyltridecyl]-, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



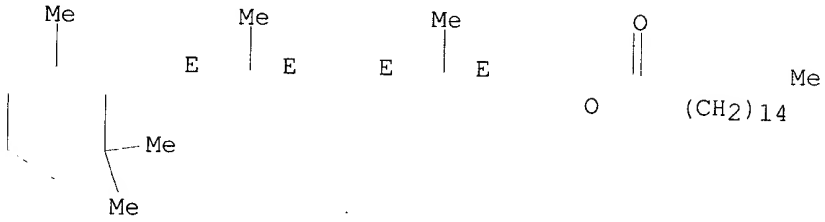
RN 68-26-8 HCAPLUS
CN Retinol (9CI) (CA INDEX NAME)

Double bond geometry as shown.



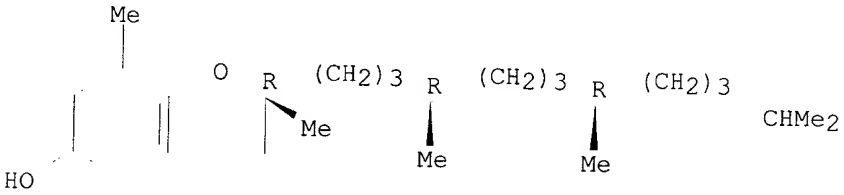
RN 79-81-2 HCAPLUS
CN Retinol, hexadecanoate (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 119-13-1 HCAPLUS
CN 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,8-dimethyl-2-[(4R,8R)-4,8,12-trimethyltridecyl]-, (2R)- (9CI) (CA INDEX NAME)

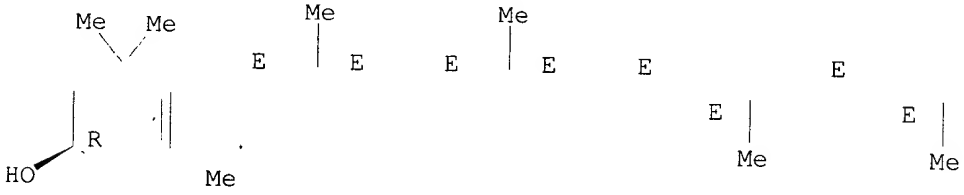
Absolute stereochemistry.



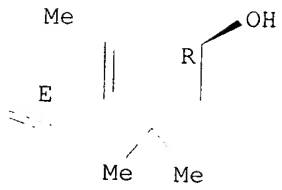
RN 144-68-3 HCAPLUS
CN .beta.,.beta.-Carotene-3,3'-diol, (3R,3'R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

PAGE 1-A

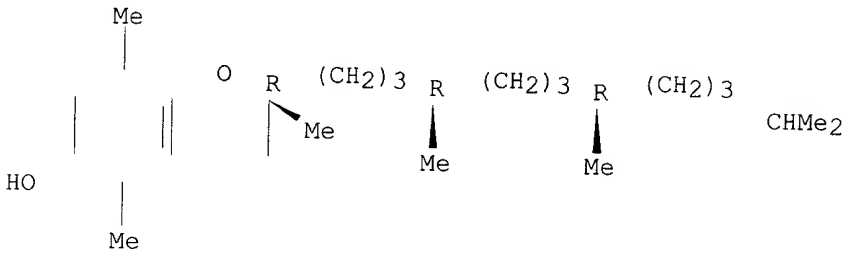


PAGE 1-B



RN 148-03-8 HCAPLUS
CN 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,5,8-trimethyl-2-[(4R,8R)-4,8,12-trimethyltridecyl]-, (2R)-rel- (9CI) (CA INDEX NAME)

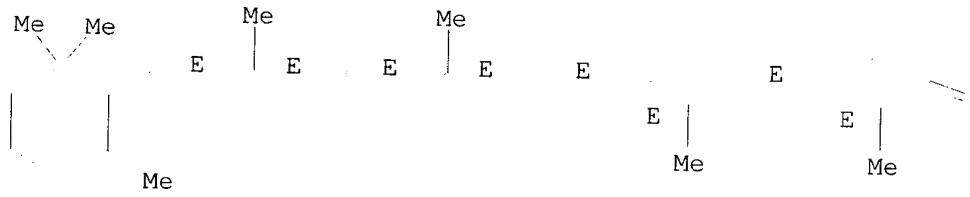
Relative stereochemistry.



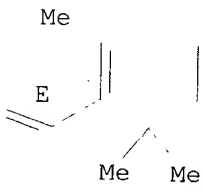
RN 432-70-2 HCAPLUS
CN .beta.,.epsilon.-Carotene (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



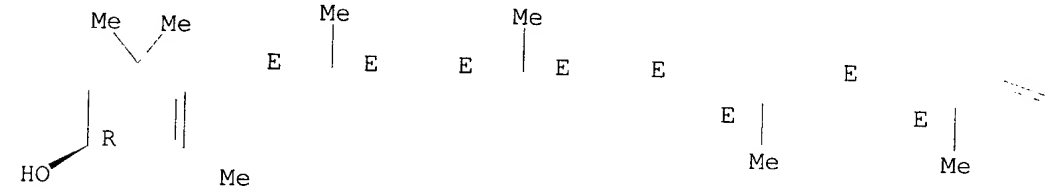
PAGE 1-B



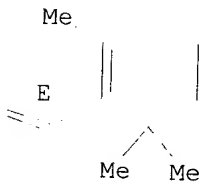
RN 472-70-8 HCAPLUS
CN .beta.,.beta.-Caroten-3-ol, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

PAGE 1-A



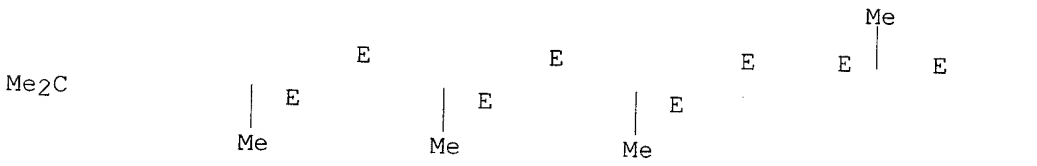
PAGE 1-B



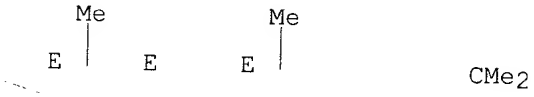
RN 502-65-8 HCAPLUS
CN .psi.,.psi.-Carotene (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

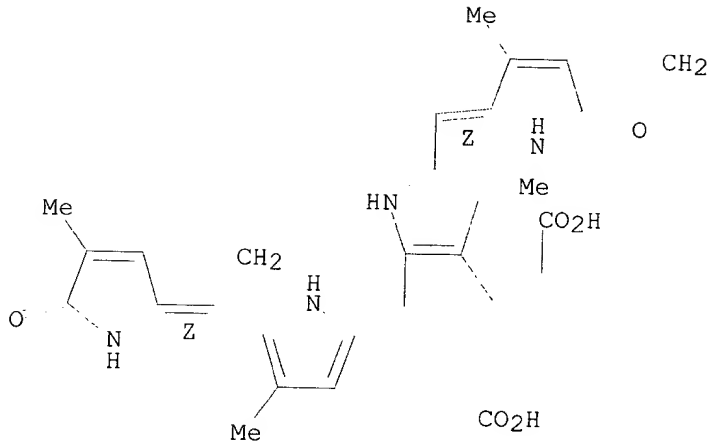


PAGE 1-B



RN 635-65-4 HCAPLUS
CN 21H-Biline-8,12-dipropanoic acid, 2,17-diethenyl-1,10,19,22,23,24-hexahydro-3,7,13,18-tetramethyl-1,19-dioxo- (9CI) (CA INDEX NAME)

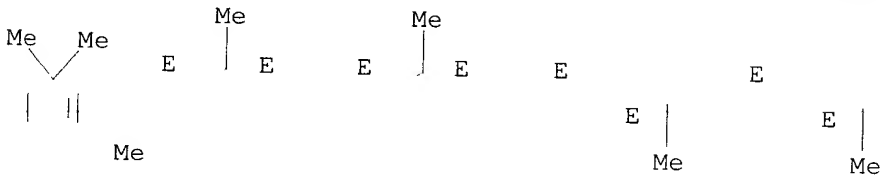
Double bond geometry as shown.



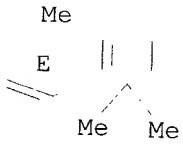
RN 7235-40-7 HCAPLUS
CN .beta.,.beta.-Carotene (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



RN 9013-66-5 HCAPLUS
CN Peroxidase, glutathione (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L91 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2003 ACS
AN **1997:105434** HCAPLUS
DN **126:209233**
TI Application of molecular epidemiology to lung cancer chemoprevention
AU Mooney, LaVerne A.; Perera, Frederica P.
CS Division Environmental Health Sciences, Columbia University School Public Health, New Yori, NY, 10032, USA
SO Journal of Cellular Biochemistry (1996), (Suppl. 25), 63-68
CODEN: JCEBD5; ISSN: 0730-2312
PB Wiley-Liss
DT Journal
LA English
CC **9-16** (**Biochemical Methods**)
Section cross-reference(s): 4, 14

AB Mol. epidemiol. has made great progress in detecting and documenting carcinogenic exposures and host susceptibility factors, in an effort to explain interindividual variation in disease. Interindividual differences in cancer risk have been hypothesized to result from an array of both genetic and acquired factors including **nutritional** status. Elevated risk of lung cancer has been assocd. with polymorphisms of metabolic genes such as CYP1A1 and GSTM1. Numerous studies have demonstrated that **diets** rich in fruits and vegetables are protective against cancer, and have correlated high levels of **antioxidants** in the blood with decreased risk. As a first step in identifying susceptible individuals, we have assessed the combined effect of genetic factors and **nutritional** status on DNA adducts in a population of healthy smokers. Plasma retinol, .beta.-carotene, .alpha.-**tocopherol**, and zeaxanthin were inversely correlated with DNA damage, esp. in subjects lacking the "protective" GSTM1 gene. Research is ongoing using biomakers to det. the effect of **supplementation** with **antioxidants**/vitamins on DNA damage, esp. in population subsets with putative "at risk" genotypes. Information on mechanisms of interactions between exposure, micronutrients, and other susceptibility factors is important in the development of effective practical interventions.

ST mol epidemiol lung cancer chemoprevention

IT DNA
RL: ANT (Analyte); ANST (Analytical study)
(adducts; application of mol. epidemiol. to lung cancer chemoprevention)

IT Blood plasma
Genetic polymorphism
Lung, neoplasm
Tobacco smoke
(application of mol. epidemiol. to lung cancer chemoprevention)

IT **Diet**
Nutrition, animal
RL: ANT (Analyte); ANST (Analytical study)
(application of mol. epidemiol. to lung cancer chemoprevention)

IT Epidemiology
RL: ANT (Analyte); ANST (Analytical study)
(mol.; application of mol. epidemiol. to lung cancer chemoprevention)

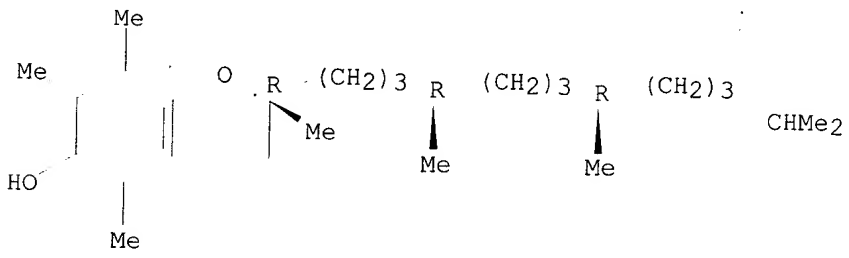
IT **59-02-9**, .alpha.-**Tocopherol 68-26-8**, Retinol
144-68-3, Zeaxanthin **7235-40-7**, .beta.-Carotene
RL: ANT (Analyte); ANST (Analytical study)
(application of mol. epidemiol. to lung cancer chemoprevention)

IT **59-02-9**, .alpha.-**Tocopherol 68-26-8**, Retinol
144-68-3, Zeaxanthin **7235-40-7**, .beta.-Carotene
RL: ANT (Analyte); ANST (Analytical study)
(application of mol. epidemiol. to lung cancer chemoprevention)

RN 59-02-9 HCAPLUS

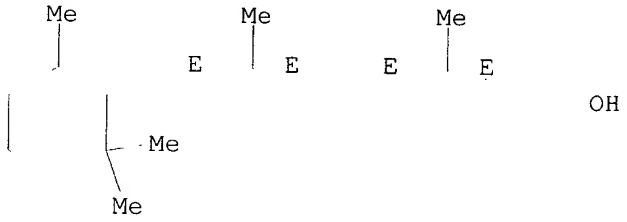
CN 2H-1-Benzopyran-6-ol, 3,4-dihydro-2,5,7,8-tetramethyl-2-[(4R,8R)-4,8,12-trimethyltridecyl]-, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 68-26-8 HCAPLUS
CN Retinol (9CI) (CA INDEX NAME)

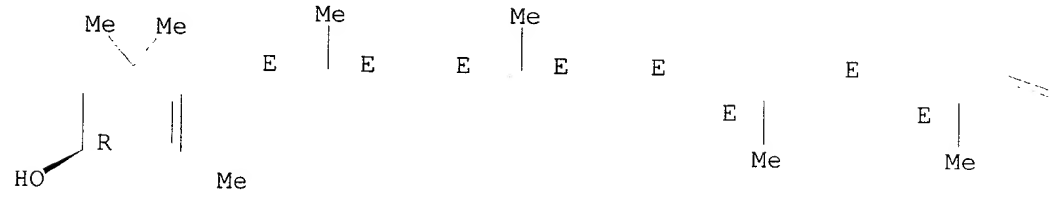
Double bond geometry as shown.



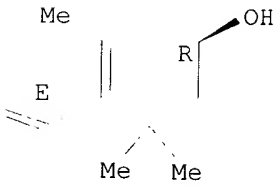
RN 144-68-3 HCAPLUS
CN .beta.,.beta.-Carotene-3,3'-diol, (3R,3'R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

PAGE 1-A



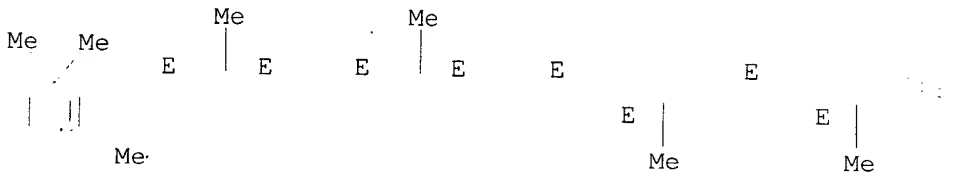
PAGE 1-B



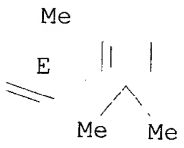
RN 7235-40-7 HCAPLUS
CN .beta.,.beta.-Carotene (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

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FILE 'WPIX' ENTERED AT 08:52:12 ON 24 APR 2003
COPYRIGHT (C) 2003 THOMSON DERWENT

FILE LAST UPDATED:          07 APR 2003      <20030407/UP>
MOST RECENT DERWENT UPDATE:     200323        <200323/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

    Due to data production problems the WPI file had
    to be reset to update 200323.
    SDIs for update 24 will be rerun.
    Answer sets created after April 10 may at least
    temporarily be affected.

>>> NEW WEEKLY SDI FREQUENCY AVAILABLE --> see NEWS  <<<

>>> SLART (Simultaneous Left and Right Truncation) is now
    available in the /ABEX field. An additional search field
    /BIX is also provided which comprises both /BI and /ABEX <<<

>>> PATENT IMAGES AVAILABLE FOR PRINT AND DISPLAY <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES,
    SEE http://www.derwent.com/dwpi/updates/dwpicov/index.html <<<

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
    PLEASE VISIT:
 http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER
    GUIDES, PLEASE VISIT:
    http://www.derwent.com/userguides/dwpi_guide.html <<<

=> d all abeq tech abex l92

L92  ANSWER 1 OF 1  WPIX   (C) 2003 THOMSON DERWENT
AN   2002-048661 [06]   WPIX
DNN  N2002-035986       DNC C2002-013578
TI   Optical antioxidant sensing process for measuring free radical scavenging
     efficiency of a nutritional formulation involves chemically tagging and
     detecting oxygen radicals in a medium and measuring the tagged radicals.
DC   B04 D16 S03
IN   NICK, G L
PA   (NICK-I) NICK G L
CYC  1
PI   US 2001036671 A1 20011101 (200206)*      10p    C12Q001-28      <--
ADT  US 2001036671 A1 Provisional US 2000-192251P 20000325, US 2001-814151
     20010321
PRAI US 2000-192251P  20000325; US 2001-814151   20010321
IC   ICM  C12Q001-28
     ICS  G01N021-75
```

AB US2001036671 A UPAB: 20020128
NOVELTY - An optical antioxidant sensing process involves chemically tagging oxygen radicals in a medium with organic dye reagent and detecting the tagged radicals; introducing an antioxidant nutritional formulation to the medium; detecting and measuring the tagged oxygen radicals; calculating the free radical scavenging efficiency; and assaying this effectiveness of the formulation.

DETAILED DESCRIPTION - An optical antioxidant sensing process involves: introducing an organic dye reagent that reacts with oxygen radicals to the medium to chemically tag the oxygen radicals in the medium; detecting and measuring the population of the tagged oxygen radicals using an optical fiber sensor; introducing the nutritional formulation with antioxidant properties to the medium; detecting and measuring the relative population of the tagged oxygen radicals in the medium using the optical fiber sensor; calculating the free radical scavenging efficiency of the nutritional formulation using the oxygen radical population measurements; and assaying the free radical scavenging effectiveness of the nutritional medium.

An INDEPENDENT CLAIM is also included for measuring antioxidant activity in an in-vitro model mimicking the gastrointestinal tract involving: introducing a functional food-based antioxidant sample to a first vessel containing ingredients that mimic the environment in a stomach segment of the gastrointestinal (GI) tract; pumping the resultant solution into a second vessel containing ingredients that mimic the environment in a small intestine segment of the tract; introducing a pancreatic fluid solution to the second vessel to further mimic the environment of the small intestine segment, introducing a bile salt solution to the second vessel to further mimic the environment in the small intestine segment, pumping the resultant solution into a third vessel containing ingredients that mimic the environment in a large intestine segment of the GI tract; and assaying solutions from the vessel using the optical antioxidant sampling process to determine the solution's relative intracellular effects on free radicals in the GI tract.

USE - For measuring the free radical scavenging efficiency of a nutritional formulation when encountering reactive oxygen radical species in a medium (claimed) and fresh whole foods, dried whole foods manufactured in a supplement form, vitamins and phytonutrients synthesized and/or isolated and other pre-formulated nutritional supplements that are designed to demonstrate antioxidant activity when administered orally.

ADVANTAGE - The process assays the free radical scavenging capability of specific antioxidant fortified cells, by encountering various reactive oxygen species (ROS), that are quantifying the intracellular chemical changes caused by oxidation, or loss of hydrogen groups. Thus the process can be adapted to any cellular system in an in-vitro or in-vivo environment to measure the effectiveness of a food-based anti-oxidant supplement or whole food compared to that of an isolated antioxidant, and can not only measure the antioxidant capacity of a food or a supplement, but also the protective effects provided by the cellular system occurring in-vivo. The probe used is also sensitive to peroxy radicals such as hydrogen peroxide, organic hydroperoxide nitric oxide, peroxynitrile; and additionally to hydroxyl and transition metal oxidative damage. The process is cost-effective and time saving. The assay can be performed in a microplate format fluorometer and can be completed in three hours.

DESCRIPTION OF DRAWING(S) - The figure shows a functional flowchart of the process.

Dwg.1/4

FS CPI EPI
FA AB; GI; DCN
MC CPI: B04-B04H; B04-L03B; B11-C07B3; B11-C08E2; B11-C08E3; B12-K04A; D03-H01T2; D05-A02A; D05-C10; D05-H09
EPI: S03-E04E
TECH UPTX: 20020128
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Process: The process

involves: forming a control group including a medium that contains tagged fluorescent oxygen radicals; incubating a first portion of the control group with a first sample of a nutritional formulation having antioxidant properties; incubating a second portion of the control group with a second sample of the nutritional formulation having antioxidant properties in isolated form; measuring the free radical scavenging activity of the first sample in the first portion of the control group using an optical fiber sensor; measuring the free radical scavenging activity of the second sample in the second portion of the control group using the optical fiber sensor; and assaying the antioxidant capacity of the first and second samples; and further involves introducing an oxygen catalyst promoter to the medium to increase oxidative activity. Preferred Components: The first sample of nutritional formulation comprises a food-based source of a key phyto-nutrient with antioxidant capabilities (a) or a vitamin with antioxidant capabilities (b) such as wheat germ oil (c). The second sample of nutritional formulation comprises (a), in isolated form (b) or in isolated form (preferably vitamin E, especially Trolox (isolated form of vitamin E)) or (c). Preferred Dye: The organic dye reagent is 2-7 dichlorofluorescin (H2DCFDA) and has a chemical composition that diffuses through a cell membrane.

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Catalyst Promoter: The oxygen catalyst promoter is selected from peroxidase (preferably horse radish peroxidase).

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Catalyst Promoter: The oxygen catalyst promoter comprises H2O2, transition metal, hydroxides or superoxides.

ABEX UPTX: 20020128

EXAMPLE - No suitable example is given.

```
=> d his

     (FILE 'REGISTRY' ENTERED AT 07:29:15 ON 24 APR 2003)
                DEL HIS
                E PEROXIDASE/CN
L1            1 S E3
                E PEROXIDASE
L2         2357 S E3,E4
L3         2356 S L2 NOT L1
                E HYDROGEN PEROXIDE/CN
L4            1 S E3
                E OXYGEN/CN
L5            1 S E3
                E VITAMIN E/CN
L6            1 S E3
L7          416 S ?TOCOPHER?/CNS
L8           79 S VITAMIN E
L9          374 S L7,L8 AND 1/NC NOT L6
L10         268 S L9 NOT SQL/FA

     FILE 'HCAPLUS' ENTERED AT 07:34:11 ON 24 APR 2003
L11       45816 S (FOOD OR DIET? OR NUTRIT?)(L)SUPPLEMENT?
L12         504 S L11 AND FREE(L)RADICAL
L13         218 S L11 AND SCAVENG?
                E FREE RADICAL/CT
                E E5+ALL
                E E2+ALL
L14        3329 S E4+NT
                E E6+ALL
                E REACTIVE OXYGEN/CT
                E E4+ALL
```

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L15        17310 S E3
L16          149 S L11 AND L14,L15
L17          817 S L11 AND (L5 OR O2 OR OXYGEN?)
L18         1247 S L12,L13,L16,L17
L19         4025 S L11 AND (L6 OR L10 OR VITAMIN "E" OR ?TOCOPHER?)
L20          409 S L18 AND L19

     FILE 'REGISTRY' ENTERED AT 07:39:31 ON 24 APR 2003
L21            1 S SUPEROXIDE/CN
L22            2 S L5,L21

     FILE 'HCAPLUS' ENTERED AT 07:39:54 ON 24 APR 2003
L23          626 S L11 AND (L21 OR SUPEROXIDE)
L24          228 S L19 AND L23
L25          571 S L20,L24
L26            5 S L25 AND (BIOCHEM?(L)METHOD?)/SC,SX
L27          331 S L11 AND (BIOCHEM?(L)METHOD?)/SC,SX
L28          326 S L27 NOT L26
L29           15 S L28 AND L12,L13,L14,L15,L17,L23
L30          242 S 2 7 DICHLOROFLUORESCIN?
L31            1 S 2 7 DICHLORO FLUORESCIN?
L32           27 S H2DCFDA

     FILE 'REGISTRY' ENTERED AT 07:44:03 ON 24 APR 2003
L33            1 S 87021-22-5
L34            0 S 87021-22-5/CRN

     FILE 'HCAPLUS' ENTERED AT 07:44:20 ON 24 APR 2003
L35           21 S L33
L36          271 S L30-L32,L35
L37            3 S L36 AND L11
L38       506138 S NUTRIT?/SC,SX
L39           10 S L38 AND L36
L40            7 S L39 NOT L37
L41          556 S L38 AND L14,L15
L42         7609 S L38 AND (L5 OR O2 OR OXYGEN?)
L43         2707 S L38 AND (SCAVENG? OR FREE(L)RADICAL)
L44        13887 S L38 AND (L6 OR L10 OR VITAMIN "E" OR ?TOCOPHER?)
L45         2158 S L38 AND (L33 OR SUPEROXIDE)
L46         1904 S L41-L43 AND L44,L45
L47            8 S L46 AND (BIOCHEM?(L)METHOD?)/SC,SX
                 SEL DN AN 5-7
L48            5 S L47 NOT E1-E9
                 E DYES/CT
                 E E3+ALL
L49        14294 S L11,L38 AND (E3+NT OR E85+NT OR E90+NT OR E98+NT)
L50          485 S L49 AND L41-L43
L51          139 S L49 AND L18
L52          535 S L50,L51
L53           76 S L52 AND (L1 OR L3 OR L4 OR H2O2 OR HYDROGEN PEROXIDE OR ?PERO

     FILE 'REGISTRY' ENTERED AT 08:00:23 ON 24 APR 2003
                 E SUPEROXIDE
L54         1626 S E3

     FILE 'HCAPLUS' ENTERED AT 08:00:36 ON 24 APR 2003
L55           52 S L54 AND L52
L56           99 S L53,L55
L57            6 S L56 AND (ANTIOXIDANT SUPPLEMENTATION OR ASSESSMENT OR IMPACT
                 SEL DN AN 3 4
L58            2 S L57 AND E1-E6
                 E NICK G/AU
L59            5 S E3,E4
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                SEL DN AN 1
L60           1 S L59 AND E1-E3
L61           8 S L48,L58,L60
L62           8 S L61 AND L11-L20,L23-L32,L35-L53,L55-L61
L63           7 S L62 AND ANTIOXIDANT
L64           7 S L62 AND ANTIOXIDANTS+NT/CT
L65           5 S L62 AND VITAMIN(S)"E"
L66           4 S L62 AND ?TOCOPHER?
L67           8 S L62 AND (H2O2 OR HYDROGEN PEROXIDE OR L4 OR L5 OR O2 OR OXYGE
L68           8 S L61-L67
L69           5 S L68 AND ?OXIDAT?
L70           8 S L68,L69
                SEL DN AN 1 3 6 8
L71           4 S L70 NOT E4-E15
L72      490051 S (BIOCHEM?(L)METHOD?)/SC,SX
L73         160 S L27 AND (FOOD? OR FEED? OR NUTRI? OR DIET?)/SC,SX,CW
                E NUTRITION/CT
L74       26906 S E9-E15
                E E9+ALL
L75       82101 S E4,E3+NT
L76       50865 S E30
L77        1415 S L72 AND L74-L76
L78        1483 S L73,L77
L79         100 S L78 AND (L14,L15 OR (OXYGEN? OR FREE OR OXIDAT?)(L)(RADICAL O
L80          11 S L79 AND (VITAMIN(L)"E" OR ?TOCOPHER? OR L6 OR L10)
L81          41 S L78 AND (?PEROXIDASE? OR L1 OR L2)
L82          12 S L79 AND L81
L83          20 S L80,L82,L71
L84           2 S L83 AND (DYE(L)ORGANIC OR REAGENT OR REAGENTS+NT/CT)
L85           1 S L84 NOT CHOLESTEROL
L86          18 S L83 NOT L84
                SEL DN AN 3 5-9 11 13-15
L87          10 S L86 AND E1-E30
L88          11 S L85,L87 AND L11-L20,L23-L32,L35-L53,L55-L87
                SEL RN L88 2

     FILE 'REGISTRY' ENTERED AT 08:36:02 ON 24 APR 2003
L89           6 S E31-E36

     FILE 'HCAPLUS' ENTERED AT 08:36:12 ON 24 APR 2003
L90           3 S L89 AND L88
L91          11 S L88,L90

     FILE 'HCAPLUS' ENTERED AT 08:36:31 ON 24 APR 2003

     FILE 'WPIX' ENTERED AT 08:38:09 ON 24 APR 2003
                E US2001036671/PN
L92           1 S E3
L93        1142 S C12Q001-28/IC,ICM,ICS
L94        4732 S ?PEROXIDASE?/BIX
L95        4756 S (B04-L03B OR C04-L03B OR B04-B02C2 OR C04-B02C2)/MC
L96        8235 S L93-L95
L97        8235 S L93-L96
L98          26 S L97 AND G01N021-75/IC,ICM,ICS
L99         393 S L97 AND (B11-C07B3 OR C11-C07B3 OR S03-E04E)/MC
L100          1 S L98,L99 AND D03-H01T?/MC
L101          1 S L98,L99 AND D03-H?/MC
L102          2 S L98,L99 AND Q220/M0,M1,M2,M3,M4,M5,M6
L103          0 S L98,L99 AND A23L/IC,ICM,ICS
L104          2 S L100-L102
L105        221 S L97 AND D03-H?/MC
L106         71 S L97 AND Q220/M0,M1,M2,M3,M4,M5,M6
L107        154 S L97 AND A23L/IC,ICM,ICS
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L108         296 S L105-L107
L109          25 S L108 AND Q505/M0,M1,M2,M3,M4,M5,M6
L110          57 S L108 AND (B12-K04? OR C12-K04? OR D05-H09)/MC
L111          53 S L108 AND (N102 OR P831)/M0,M1,M2,M3,M4,M5,M6
L112          35 S L110,L111 NOT L109,L104

     FILE 'WPIX' ENTERED AT 08:52:12 ON 24 APR 2003

     FILE 'DPCI' ENTERED AT 08:52:28 ON 24 APR 2003
           E US2001036671/PN
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